APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/920,983	08/02/2001	Martin Haase	DE920000060US1	6123

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EXAMINER
VO, HUYEN X

ART UNIT	PAPER NUMBER
2655	

DATE MAILED: 03/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/920,983	HAASE ET AL.
	Examiner	Art Unit	
	Huyen X. Vo	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 January 2006</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1,3,4,6 and 8-14</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,3,4,6 and 8-14</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>02 August 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   Applicant has submitted an amendment, filed 12/22/2005, while arguing to

traverse prior art rejection based on the amended limitation regarding *"extracting a*

plurality of prosodic features in an environment of the audio stream where the

voicedness of the fundamental frequency estimates are lower than the threshold value,

wherein the environment is a period of time between 500 and 4000 milliseconds

preceding and following the candidate boundaries" (pages 8-9 of the Remarks section).

Applicant's argument has been fully considered. However, upon further consideration,

a new ground of rejection is made in view of McKiel, Jr. (US 5448679) necessitated by

claim amendment.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1, 6, and 10-12 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Shriberg et al. (incorporated by reference) in view of McKiel, Jr. (US

5448679).

4.   Regarding claims 1 and 11-12, Shriberg et al. disclose a method, a computer

usable medium having computer readable program code, and a digital audio processing

system for the segmentation of an audio stream into semantic or syntactic units wherein

the audio stream is provided in a digitized format, comprising the steps of: determining a

fundamental frequency for the digitized audio stream (*Section 2.1.2.3 on page 133*);

detecting changes of the fundamental frequency in the audio stream (*pages 134-135,*

refer to figure 4); determining candidate boundaries for the semantic or syntactic units

depending on the detected changes of the fundamental frequency (*pages 134-135*);

extracting a plurality of prosodic features in an environment of the audio stream where

the voicedness of the fundamental frequency estimates are lower than the threshold

value (*interpreted as un-voiced section, section 2.1*), wherein the environment is a

period of time between 500 and 4000 milliseconds preceding and following the

candidate boundaries (*section 2.1.1 on page 130, "in principle one could look at longer*

regions [more than 200 ms]"); combining the plurality of prosodic features (*section 2.1.2*

on page 131 and section 2.1.4 on page 137); and determining boundaries for the

semantic or syntactic units depending on the at least one prosodic feature (*pages 134-*

135, F0 is a prosodic feature).

        Shriberg et al. fail to specifically disclose the step of detecting the changes of the

fundamental frequency includes providing a threshold value for estimates of the

fundamental frequency's voicedness and determining whether the voicedness of the

fundamental frequency estimates are higher or lower than the threshold value, and

wherein the voicedness of the fundamental frequency estimates lower than the

threshold value equals no voice, and wherein the voicedness of the fundamental

frequency estimates higher than the threshold value equals voice. However, McKiel, Jr.

teaches the step of detecting the changes of the fundamental frequency includes

providing a threshold value for estimates of the fundamental frequency's voicedness

and determining whether the voicedness of the fundamental frequency estimates are

higher or lower than the threshold value, and wherein the voicedness of the

fundamental frequency estimates lower than the threshold value equals no voice, and

wherein the voicedness of the fundamental frequency estimates higher than the

threshold value equals voice (*elements 26 and 30 in figure 2 and/or col. 3, line 62 to col.

4, line 6, the pitch extractor provides a pitch value which is then compared with a

threshold value to determine voiced/unvoiced segment of the audio*).

Since Shriberg et al. and McKiel, Jr. are analogous art because they are from the

same field of endeavors, it would have been obvious to one of ordinary skill in the art at

the time of invention to modify Shriberg et al. by incorporating the teaching of McKiel, Jr.

in order to enable the system to use appropriate coding method for each of the voiced

and unvoiced segments of the input speech signal to enhance coding efficiency.

5.   Regarding claims 6 and 10, Shriberg et al. further disclose the method of claim 1,

wherein at least one prosodic feature is represented by the fundamental frequency

(*Section 2.1.1, page 130*) and the step of performing a prosodic feature classification

based on a predetermined classification tree (*section 2.1.2 on page 131, grouping

features*).

6.   Claims 3-5, 8, and, 13 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Shriberg et al. (incorporated by reference) in view of McKiel, Jr. (US

5448679), as applied to claim 1, and further in view of Yeldener et al. (US 5774837).

7.   Regarding claims 3 and 13, Shriberg et al. fail to specifically disclose a method

for defining an index function for the fundamental frequency having a value =0 if the

voicedness of the fundamental frequency is lower than the threshold value and having a

value =1 if the voicedness of the fundamental frequency is higher than the threshold

value. However, Yeldener et al. teach a method for defining an index function for the

fundamental frequency having a value =0 if the voicedness of the fundamental

frequency is lower than the threshold value and having a value =1 if the voicedness of

the fundamental frequency is higher than the threshold value (*col. 14, In. 4-55, the goal

is to use 0 and 1 to represent for unvoiced and voice portions, respectively*).

        Since Shriberg et al. and Yeldener et al. are analogous art because they are from

the same field of endeavors, it would have been obvious to one of ordinary skill in the

art at the time of invention to modify Shriberg et al. by incorporating the teaching of

Yeldener et al. in order to enable the system to pay more coding emphasis on the voice

portion than unvoiced portion to reduce processing time and increase transmission rate.

8.   Regarding claims 4-5, Shriberg et al. further disclose a method for extracting at

least one prosodic feature in an environment of the audio stream where the value of the

index function is equal 0 (*section 2.1.1 on page 130 discusses feature extraction of both voice and unvoiced portions*), that the environment is a time period between 500 and 4000 milliseconds (*Section 2.1.1 on page 130*).

9.   Regarding claim 8, Shriberg et al. do not disclose a method that first detect speech and non-speech segments in the digitized audio stream and performing the steps of claim 1 thereafter only for detected speech segments. However, Yeldener et al. teach a method that first detect speech and non-speech segments in the digitized audio stream and performing the steps of claim 1 thereafter only for detected speech segments (*col. 14, ln. 5-55*).

Since Shriberg et al. and Yeldener et al. are analogous art because they are from the same field of endeavors, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Shriberg et al. by incorporating the teaching of Yeldener et al. in order to enable the system to pay more coding emphasis on the voice portion than unvoiced portion to reduce processing time and increase transmission rate.

10.   Claims 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shriberg et al. (incorporated by reference) in view of McKiel, Jr. (US 5448679), in view of Yeldener et al. (US 5774837), as applied to claims 8 and 13 above, and further in view of Eryilmaz (US 5867574).

11.   Regarding claims 9 and 14, the modified Shriberg et al., as applied to claims 8

and 13 above, fail to disclose a method of detecting of speech and non-speech

segments comprises utilizing the signal energy or signal energy changes, respectively,

in the audio stream. However, Eryilmaz teaches a method of detecting of speech and

non-speech segments comprises utilizing the signal energy or signal energy changes,

respectively, in the audio stream (*col. 3, ln. 40 to col. 4, ln. 54*).

Since the modified Shriberg et al. and Eryilmaz are analogous art because they

are from the same field of endeavors, it would have been obvious to one of ordinary skill

in the art at the time of invention to further modify Shriberg et al. by incorporating the

teaching of Eryilmaz in order to enhance the detection of voice portion in the signal

when background noise is present.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Huyen X. Vo whose telephone number is 571-272-7631.

The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Richemond Dorvil can be reached on 571-272-7602. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

HXV   2/22/2006

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RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER